Macroscopic pK_as of Cysteine

Cys⁺¹
$$\frac{}{pK_{a1} = 1.71}$$
 Cys⁰ $\frac{}{pK_{a2} = 8.33}$ Cys⁻¹ $\frac{}{pK_{a3} = 10.78}$ Cys⁻²

Microscopic pK_as of Cysteine

$$pK_{a,S} = 8.53$$

$$pK_{a,N} = 10.03$$

 pK_as of Glycine

$$H_3N \xrightarrow{\oplus} OH \longrightarrow pK_{a1} = 2.35$$
 $H_3N \xrightarrow{\oplus} OO \longrightarrow pK_{a2} = 9.87$ $H_2N \xrightarrow{O}OO$